

GeBeMA

Development of an overall method for the determination of microplastics in wastewater

The occurrence of microplastics (MP) in the environment is a comparatively new environmental problem. Although many studies have examined a wide variety of environmental compartments for microplastics and produced a broad range of findings and results, only a few results are comparable with each other, as there is still no standardized method or at least a coordinated protocol for the overall analysis of MP. The different sampling options (net sampling, sieve, and filter cascade, sedimentation in different types of water bodies, river velocities, sampling period, etc.) show that very specific approaches are required in order to obtain representative samples. And for further analysis, various spectroscopic and thermoanalytical methods are available, each of which requires specific sample preparation and provides a wide range of result parameters.

The GeBeMA project aims to develop an overall method for the determination of MP in wastewater from sewage treatment plants. Overall method means that a continuous method is to be developed and validated, from the extraction of representative solid samples from the wastewater to sample preparation and analysis. The overall method should be practicable, cost-effective and suitable for the routine determination of MP in wastewater at sewage treatment plants. Sub-goals of the project are the comparison of two MP analysis methods (EA-OEM, TED-GC/MS), the application of the overall method in the inflow and outflow of a wastewater treatment plant of a mixed water system and the measurement over longer periods of time in order to investigate the temporal variance of MP in wastewater at wastewater treatment plants.

Project partners

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Umweltbundesamt GmbH

Institut für Wasserbau, Hydraulik und Fließgewässerforschung, Universität für Bodenkultur Wien

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